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THE 'EPITOME' OF VESALIUS ON VELLUM IN THE BRITISH MUSEUM LIBRARY.

W. G. Spencer, London

The 'Epitome' was composed by Vesalius, and the special drawings were made, whilst the 'Fabrica' was being prepared*).

He intended it as a *semita* or short cut, a *compendium* or abridgement, an *appendix* or appendage to the 'Fabrica', an index. and guide to anatomy apart from dissecting. The peculiar arrangement of its contents bears witness to one phase of the genius of Vesalius; it presents the anatomy and physiology known to him in such a condensed way that an elementary knowledge might be rapidly acquired.

The perfectly preserved copy of the Epitome on vellum in the British Museum Library, in addition to its anatomical importance, is a very fine production, both as regards printing and wood-block engraving, accomplished about one hundred years after the introduction of those two arts. It was doubtless the example included in the sale of Dr. Richard Mead's books in November 1754 and April 1755, and purchased for £ 8. 12. 0. There existed for 371 years in the Library at Louvain another specimen on vellum. D. P. Delaunay the Librarian has stated that it was among the books burned in 1914. These copies may have been prepared for presentation to Charles V, and to Prince Philip, later Philip II, but there is nothing to confirm this on the one in the British Museum. The College of Physicians possesses a specimen on good paper apparently in the original binding, which has been long in the Library. Other copies of the 'Epitome' in public collections are comparatively few. The 'Epitome' I describe is a maximo folio, the yellow leather covers measure 550 mm. x 370 mm., and enclose 14 leaves, marked A to O (omitting J), but the pages are not numbered. There are no mythological figures, such as are found in the 'Fabrica' either in front, or at the back.

*) Fab: 1543. Praef: 4. a. l. 4. — ib: lib: III. c. i. p. 257 (bis) l. 16. etc.).

The following summary will indicate some of its peculiar characteristics. —

Leaf *A recto* has a reproduction of the Frontispiece of the 'Fabrica' with the alteration of the title to: 'Andreae Vesalii Bruxellensis, Scholae Medicorum Patavinae Professoris — suorum de humani corporis fabrica librorum Epitome.' Below, in the space left by the greater height of the page as compared with the 'Fabrica', is the 'Address to the Reader', and at the foot, 'Basileae' without date. *A. verso* contains the Dedicatory Letter to Prince Philip, then aged 15, dated Aug: 13th 1542.

The 'Address to the Reader' and the 'Dedicatory Letter' are in difficult Latin the substance of which is thus summarised by Miss Joyce Lowe M. A: —

Firstly, Vesalius intended this work for the *Common man;* it was a shame that whilst studying other philosophies man should continue in ignorance of the structure and working of the body which accompanies him throughout life. The *Common man,* in order to get an elementary knowledge, should read the text, whilst using the illustrations as an atlas. Students of Art and of Medicine could make a beginning in anatomy with the illustrations against which was set a voluminous index of the lettering. The illustrations could be studied in a synthetical fashion, beginning from the skeleton and working up to the nudes, or by an analytical procedure, which might be accompanied by dissecting, descend from the nude figures to the skeleton. To the finished drawings were added diagrams, intended to be cut out and superimposed on the main figures.

Secondly, a standpoint of Vesalius differs from present day views. One speaks now in terms of Evolution. Vesalius spoke of the *Divinus Opifex,* the Divine Designer and Constructor of the Universe and of Man, or of the *Divinus Artifex*, the Divine Artisan who originated minute details and fastened together the various parts — Vesalius employed the same word *compages* ('articulation') when referring to the fastening together by the *Divine Artifex*, as when speaking of a skeleton which he himself had put together. The finished and highest work of the Designer was the young adult human being, which Vesalius aimed to depict, not as when dead, but alive, with the muscles in action. Animals were products of a less elaborate design.

The leaves *B. recto* to *G. recto* contain in double columns the brief text; the outer margin of each column has the Greek synonyms, but only Greek, of the Latin terms. — The text is divided into six chapters, I. 'On the Bones and Cartilages, or those parts

HIC NON prolixior nominum externas hominis ſedes locaſue indicantium enumeratio inſtituitur, quàm cõmodè imaginũ uirilis muliebriſq; corporis ſuperficiẽ exprimentiũ marginibus adhiberi poteſt. Quanquam ſuccinctam eorum deſcriptionem, ac uelut præſentium figurarum indicem duntaxat proponere nihil obſtet, quùm eadem ferè nomina externis corporis ſedibus ac oſſibus, partibusque externæ ſedi ſubditis, accommodentur, quorum præcipua, ab ijſq; qui rectiùs diſſecandi rationem aggreſſi fuerunt inſtituta, iam prius in orationis contextu, quantum propoſita nobis Epitome requirit, recenſuimus. Solet itaque uniuerſa corporis ſuperficies ab illius nominum inſtitutoribus primùm in magnas ſedes diuidi, ac dein illarum partes rurſus uarijs nomenclaturis donari. Atque ita Ægyptij medici corpus in [a] Caput, [b] Thoracem, [c] Manus, & [d] Crura diuidebant: Thoracem, perinde ac Ariſtoteles, nominantes, uniuerſum corporis [e] truncum, à iugulo aut collo clauiculis ue ad inguina & pubem, aut magis ad femorum uſque ſuperiora pertinentem: non autem tantum, ut Galenus, nonnulliq; Anatomicorum primarij, corporis ſedem coſtis ſeptam. Alij facultatum corpus uniuerſum diſpenſantium, animarumq; ſedibus mentem adhibentes, quadrifariam quidem ſimiliter ac Ægyptij corporis ſuperficiem diſcernunt, uerùm ſecus quàm illi corporis truncum in duas ſedes primùm diſtinguẽtes, manus & crura unius partis loco prima hac diuiſione enumerãt, illa quæ [f] Artus propriè uocatos conſtituunt, extremorũ nomine complectẽtes. Ac in corporis trunco duas præcipuas locant ſedes, ſecundùm duas cauitates ſecantibus inibi obuias: quarum inferior ab elatiori, interuentu ſepti tranſuerſi ſeiũcta, ſecurì naturalis altricis ue animæ ſedem ſanguificationiſq; officinã, ac inſuper huic ſubminiſtrantia organa complectitur, partibus quoque generationi famulantibus parata. Superior cauitas cordi iraſcibilis animæ ſomiti uitaliſq; ſpiritus fonti, illiſq; ſubſeruientibus organis aſcribitur. Cæterùm tertia corporis cauitas capiti tribuitur, cerebro que potiſſimùm principis animæ ſedi, animalis que ſpiritus promptuario ſacratur. Corpore in hunc modum obiter diuiſo, ſingularum partium ſuperficies ita rurſus diſtinguũtur, ut capitis totius pars anterior ſupercilijs ſuperpoſita, ac [g] crinibus nuda, [h] lineas que quaſdam proponens, [i] Frons nominetur. Hac ſuperior & uerſus capitis medium uergens, [k] Sinciput. Vtrinque ad ſincipitis latus, ſupra que [l] Aurem, cui [m] Auditorius meatus ineſt, conſiſtens, [n] Tempus. Media capitis ſedes ſinciput uerſus poſteriora ſuperans, [o] Vertex, qui ueluti centrum eſt [p] circuli crinium originem circunſcribentis. Poſt uerticem uſque ad muſculorum qui utrinque in ceruicis ſummo prominentes, in medio foueam oſtendunt, ac pleriſq; [q] Tendines dicuntur, elatiſſimam ſedem [r] Occiput ſpectatur. Prior autẽ capitis pars à frõte ad mentũ uſq; protenſa, [s] Facies. Inferior enim frõtis pars, Supercilijs ueluti eminẽtibus, piliſq; cõſitis terminis, eorundemq; [t] medio circunſcribitur. His ſubſunt [u] Oculi, inferiùs & ſuperiùs [x] Palpebris intecti: quarum ſedes ubi inuicem conniuent, & erectis ordinata que, ut in nauibus remos ſpectamus, ſerie poſitis pilis, quos [y] Cilia nuncupamus, oriatur, quo dammodo que cartilagineæ ſunt, [z] Tarſi habentur. Commiſſionis huius termini, [a] Anguli ſunt: quorum maior naſum, minor tempus ſpectat. In diſiunctarum palpebrarum medio præter [b] Caruncularn in maiori angulo conſpicuam, [c] Album candidum ue oculorum apparet: in cuius medio duo ſe offerunt circuli, quorum amplior [d] Iris & Corona eſt, minor [e] Pupilla. [f] Naſus oculos interiacet, cuius foramina [g] Nares uocantur: quarum externa latera naſi [h] Pinnulis ſeu Alis, interna uerò [i] Interſepto naſi conſtituuntur. Sedes ad naſi latera mali in modum prominulæ



Fig. 1



minulæ ac rubentes, [l] Malæ, & quibusdam Genæ uocantur. Sedes inter nasum & malas mediæ nonnullis [m] Concaua dicuntur, quo nomine alij totam oculorum [n] sedem à palpebris ad malas metitam uocarunt. Faciei pars quam inflamus [o] Bucca est. tota uerò ipsius pars à supercilijs ad elatiorem usque dentium seriem pertinens, [p] Superior maxilla nominatur, reliqua autem quæ in uiris [q] Barba decoratur, [r] Inferior. cuius anterius extremum, [s] Mentum nonnunquam [t] fouea ornatum educit, sub [u] Labri inferioris rubore consistens. [x] Elatioris labri sedes naso subdita, [y] Sulculoq; donata, [z] Mustax censetur. Quod labris circunscribitur & continetur, [a] Os, quo hiante [b] Lingua, [c] Palatū, [d] Gargareon, [e] Dentes, [f] Gingiuæ, internaq; [g] Faucium sedes occurrit. Quod caput ad clauiculas usq; aut thoracem excipit, [h] Collum & Cervix est, & si posterius nomen magis posteriori parti accommodetur, uti & anteriorem qua aspera arteria, & potissimùm ipsius [i] caput tangentibus occurrit, Guttur dictam legimus. [k] Humerus ueteribus uocabatur brachij ossis cum scapula articulus, unde & partem maximè ad colli radicem thoracisq; latera eminentem, [l] Summum humerum dixerunt. Quod ab illo prorsum uersus [m] Iugulum foueam'ue in colli radice obuium uergit, [n] Clauicula est. Quod autem ab ipso ad extremā digitorum aciem protenditur, [o] Manus: cuius prima pars (sub qua cauitas [p] Axilla aut Ala appellata, & musculis quos [q] Tendines permulti illic uocant septa, consistit) ad proximum usque articulum [r] Cubiti'ue flexum producta, [s] Brachium, & Latinorum quibusdam Humerus dicitur. Posterior flexus illius sedes [t] Gibberus est. Pars ab hoc ad conterminum articulum ducta, [u] Cubitus, & Latinorum quibusdam Brachium & [x] Vlna. Ad cubiti extremum [y] Summa manus incipit, cuius pars à cubito ad quatuor digitorum radices porrecta, in duas sedes partitur: ac cubito propinquior [z] Brachiale est, alia [a] Postbrachiale, quæ à constructionis specie cum pectore etiam [b] Pectus, à quibusdam Palma nuncupatur. Huius interior sedes caua ac uarijs monticulis septa, multisq; lineis interstincta, [c] Volam efficit. Reliqua summę manus pars, [d] Digiti sunt, singuli terni [e] partibus tanquam in acie locatis efformati, & exterius [f] Vnguibus ornati. Horum maior alijsq; actione oppositus [g] Pollex est, illi proximus [h] Index, dein [i] Medius seu Impudicus, cui proximus est [k] Medicus & Anularis. Extimam uerò sedem occupat [l] Paruus, Auricularis'ue. [m] Thoracem hîc nominamus corporis trunci partem [n] Costis septam, maximamq; sedem [o] Laterum efformantem: cuius anterior sedes [p] Pectus est, quam [q] Mamillæ, atq; in illarum medio [r] Papillæ cum obfusco ipsas ambiente [s] circulo occupant. Reliqua anterior trunci sedes [t] Abdomen constituit, cuius regio pectoris ossis cartilagini & costarū cartilaginibus illa humiliorib⁹ proxima, perinde [u] Subcartilaginea nuncupatur, ac uiscera cartilaginibus illis complexa. Sic quibus septū transfuersum præcordia appellatur, sedes in quam id cartilaginibus inseritur, Præcordiorum nomen obtinuit. quanquam rursus alij ita etiam thoracis anteriorem sedem nuncupent. Quod sub infimis costis & ilium ossis spina (quę mulieribus multo magis quàm uiris educitur) ossibus destituitur, tangentibusq; cedit, [x] Inania sunt & [y] Ilia. in quorū ueluti medio [z] Vmbilicus cernitur, sub quo mox [a] Sumen, cuius infima sedes trunci termino proxima, [b] Aqualiculus nuncupatur. Terminus autem ubi hic [c] Pudenda & Naturalia consistunt, [d] Pubes est & Pecten, ad cuius latera in femorum flexu [e] Inguina recensemus. Maris pudendi pars citra sectionem conspicua, [f] Penis & Coles uocatur: cuius summitas magis quàm reliqua longitudo crassescēs, [g] Glandem efformat, in cuius medio meatus urinæ seminiq; communis conspicitur. Huius inuolucrum [h] Præputium est, licet alijs tota penis summitas ita nuncupetur. In inuolucro reliquaq; ad anum cute protuberantē futuræ modo lineam uocamus [i] Suturam, & totam hâc exporrectam extuberantemq; ad anum usque penis partem [k] Taurum. Vti & sedem inter testium inuolucrum (quod ex cute paratum [l] Scortum dicitur) & anum conspicuam, [m] Interseminium nuncupamus. Muliebris pudendi rima, quæ uteri ceruicis est orificium, [n] Sinus uocatur, quem [o] Alæ & Colles utrinque prominentes, & cuticularis in ipsius summo apparens [p] caro ornant. Recti intestini orificium per sedem prodiens, à figura [q] Anulus, & ab officio [r] Strictor appellatur. Posterior trunci corporis pars, [s] Dorsum aut Tergū ferè nuncupatur, cuius latera in elatiori posterioriq; thoracis sede [t] Scapulis constituunt. Inter ipsas uerò [u] mediū & dorsi sedes hinc ad infimas usq; costas, aut [x] ubi id maximè in flexu protuberat, pertinens, thoraci asscribit, ac post septum transuersum consistit. Sedes uerò hanc ad nates usq; sequens, [y] Lumbos cōplectitur. Sunt autē [z] Nates carneæ & globosæ sedes, iliū ossiū occupātes dorsum, in quarum medio sacri ossis & coccygis posteriores processus uelut excarnes ad anū usq; occurrunt. Vbi articulus femoris percipitur, magnusq; [a] Rotator extuberat, [b] Coxendix est, aut Coxa, quod nomen alij [c] Femori asscribunt, ab inguinibus ad [d] Genu pertinenti: cuius posterior sedes & flexus [e] Poples nuncupatur. Genu ad proximum usq; articulum pedis'ue initiū [f] Tibia subsequitur, quæ nōnullis Crus nominatur, & si plures id nomen simul tibiæ femoriq; uelint esse cōmune. [g] Anterior tibiæ sedes ossea tangētibus occurrit, posterior autē ubi ipsius [h] Venter seu Sura cernitur, carnea. Tubera ad tibiæ imū utrinq; uelut ossea tangētibus obuia, [i] Malleoli, neutiquā uerò [k] Talus illis exceptus reconditusq; nominātur. Postica pedis pars extratibię rectitudinem retrorsum prominens, [l] Calx appellatur. Reliquę uerò pedis superficiariæ sedes prorsus ossium nomenclaturā assumunt, potissimū autē [m] Tarsi, [n] Pedij seu [o] Pectoris, quod digiti hic etiam unguibus ornati sequuntur. Quanquā ubi de integro pede sermo instituitur, infima sedes qua calcamus plerunq; Planta, & [p] Vestigium, ipsiusq; interni latus [q] Concauū, superior uerò Tarsus nuncupetur.

l μάλαι. m λοῖσθα. n γαλῖνα. o γναθοι. p ἀνὴρ γενυς. q πώγων. r ὑπόκρισις. s γένειον. t γένυον, uel γένυς. u ὑπήνη. x τὸ χεῖλος. y φάρυγξ. z μύστακες. aa τὸ λάβρον. a στόμα. b γλῶσσα. c ὑπερῶα. d γιγγλυμοὶ. uel οἱ γομφιοὶ. e ὀδόντες. f οὖλα. g φάρυγξ. h τράχηλος. σ αὐχὴν. i κάρηνα. k ὦμος. l ἀκρώμιον. m σφυρὸν. n κλεὶς. o χείρ. p μασχάλη. q τένοντες. r ἀγκὼν. s βραχίων. t ὀλίκρανον, σ λάκερτον. u πῆχυς. x ἰσχίον. y ἀκρωμία. z λέπαδνα. a μετακάρπιον. b ὄπισθεν. c θοῖνιξ. d ἀδάκτυλοι. e σκυτάλιδες, σ φάλαγγες. f ὄνυχες. g κύτινος. h λαγὼν. i μέσος. k παράμεσος, σ ἰατρικὸς. l μικρὸς. m ὄβριξ. n πλάτυσμα. o πλευρά. p στῆθος. q μαστοὶ. r θηλή. s γάστηρ. t ἐπιγάστριον. u ὑπογάστρια. x ὀμφαλὸς. y λαγόνες. z ὑπερκοτα. a ἤτρον. b ὀρχεις, σ ἰσχιακὸς. c αἰδοῖα. d ὄλισθος. e βαλανὶς. f οὐρήθρα. g βάλανος. h ποσθὴ. i ῥαφὴ. k τριβεῖον. l ἰσχίον. m ὑπερῶνιον. n ὄπισθεν. o ὀστέον. p πύγμα. q λεῖπον. r πόδες. s ἴχνος. t ὀστέα. u μετατάρσια. x ἄκρα πόδος. y ὄνυχες. z ἀκρωτήρια. a τραχηλιαῖος. b ἰσχίον. c μηρὸς. d γόνυ. e ἰγνύη. f ὑπόκνημα. g ἀστράγαλοι. σ ὀστέα. h πτερνισμὸς. i σφυρὰ. k πέδη, σ πέδιον. l πέλμα. m τάρσος.

Fig. 2

which support the body. II. On the Ligaments of the Bones and Cartilages, and of the Muscles which are the instruments of Voluntary Movement. III. On the Organs subserving the Nutriment which is made out of food and drink. IV. On the Heart and on the Organs which minister to the function of the same. V. On the Brain and on the Organs which are counted among those in the service of the brain. — VI. On the Organs which subserve the propagation of the Species.

The lower half of *G. recto* is occupied by the Portrait of Vesalius, the same as in the 'Fabrica'.

The male and female nude figures on *K. verso* and *L. recto* (Figs. 1 and 2) challenge comparison from an artistic point of view with earlier woodcut engravings, such as Dürer's "Adam" and "Eve", — but they are integral parts of the plan of the book, being designed both in general and in particular to conform to the other figures. The position of the head, trunk and extremities of the male figure are calculated to throw into action the respective muscles, and so to produce the contours on the surface. The figure is 430 mm. in height, a reduction to one fourth, i. e. it represents a man of the average height of 1720 mm. Among muscles giving rise to contours one may note the frontalis, orbicularis palpebrarum, levator anguli oris, deltoid, trapezius, biceps humeri and the bulge on each side of the brachialis anticus. In the lower limbs are seen the tensor vaginae femoris, the sartorius, the vastus internus just above the inner side of the knee, the gastrocnemius and, between it and the inner edge of the tibia, the prominence resulting from the contraction of the soleus.— One foot is arched with the tendon of the tibialis posticus tense behind the malleolus, and with the soft projection on the dorsum of the contracting extensor brevis digitorum pedis. The other foot bearing the weight has the arch flat and the tendon of the peroneus longus is prominent.

Vesalius laughed at the palmists of his day; the supinated right hand of the figure shows the prominences and furrows of the palm including cross-hatching suggesting the contraction of the palmaris brevis to produce the characteristic human hollow in the hand e. g. when dipping up water, instead of stooping to drink with the mouth as animals do. The superficial veins are shown on the flexor aspect of the arm, and on the inner side of the leg; one need but recall the *Epistola docens venam secandam* in which Vesalius, claiming to make a correction of Galen's Anatomy as to the junction of the vena azygos with the superior vena cava, had argued in favour of the method of relieving

plethora by derivation of blood through the vein at the elbow, over that of revulsion by bleeding from the leg as recommended by the Arabic physicians. Supplementary figures of the brain, eye, larynx etc. in this and the following figures are reductions of drawings in the 'Fabrica'.

The female nude figure has the right upper extremity and the two lower limbs, in the same position as the Aphrodite of Praxiteles of Knidos, but the contours of the breast and front of the abdomen and also the position of the head and left arm are quite different. In fact the figure is designed to serve as a contrast to the male nude — in the male the right arm is in supination, in the female in pronation, the head of the female is turned to exhibit the contour of the neck, hidden in the male by the beard. The female has the breasts of a young adult woman and is in strong contrast to the companion figure. The male shows the digitations of the serratus magnus, the recti abdominis stand out, and exhibit the lineae transversae, below the umbilicus there is almost a depression along the linea alba between the recti. The female nude on the other hand has not the muscular prominences, and the cross-hatching below the umbilicus depicts the contour of the hypogastrium in the young adult female. The male rests on the left foot, the female on the right. In one respect convention is followed, the figure is drawn above the middle height. A muliplication by 4 of 420 mm., equals 1,680 mm., whereas the average height of a woman; is about 1,600 mm. The figure is further adapted, so that the diagrams to be mentioned below could be superimposed on it.

The contours of these nude figures are not blurred by lettering, but the width of the page permitted of a brief enumeration of superficial positions being printed alongside each.

There are five Tabulae or plates which display the muscles together with parts of the skeleton. They are all special to the 'Epitome', measuring about 430 mm. in height, i. e. reductions to $^1/_4$, as compared with the muscle Tabulae in the 'Fabrica' which are reduced to $^1/_5$ and measure about 340 mm. in height. The figures are drawn upright, with the muscles as if in action in the position assumed. For the sake of economy and the avoidance of repetition, each figure differs on the two sides, the left side representing the exposure of a deeper layer of muscles than that on the right. The index of the letters placed on the figures is printed alongside the right and left respectively. — There is the difficulty to the present-day reader that, following Galen, Vesalius used a number and descriptive sentence, instead of the names of the muscles which subsequently came to be adopted.



Fig. 3



Fig. 4

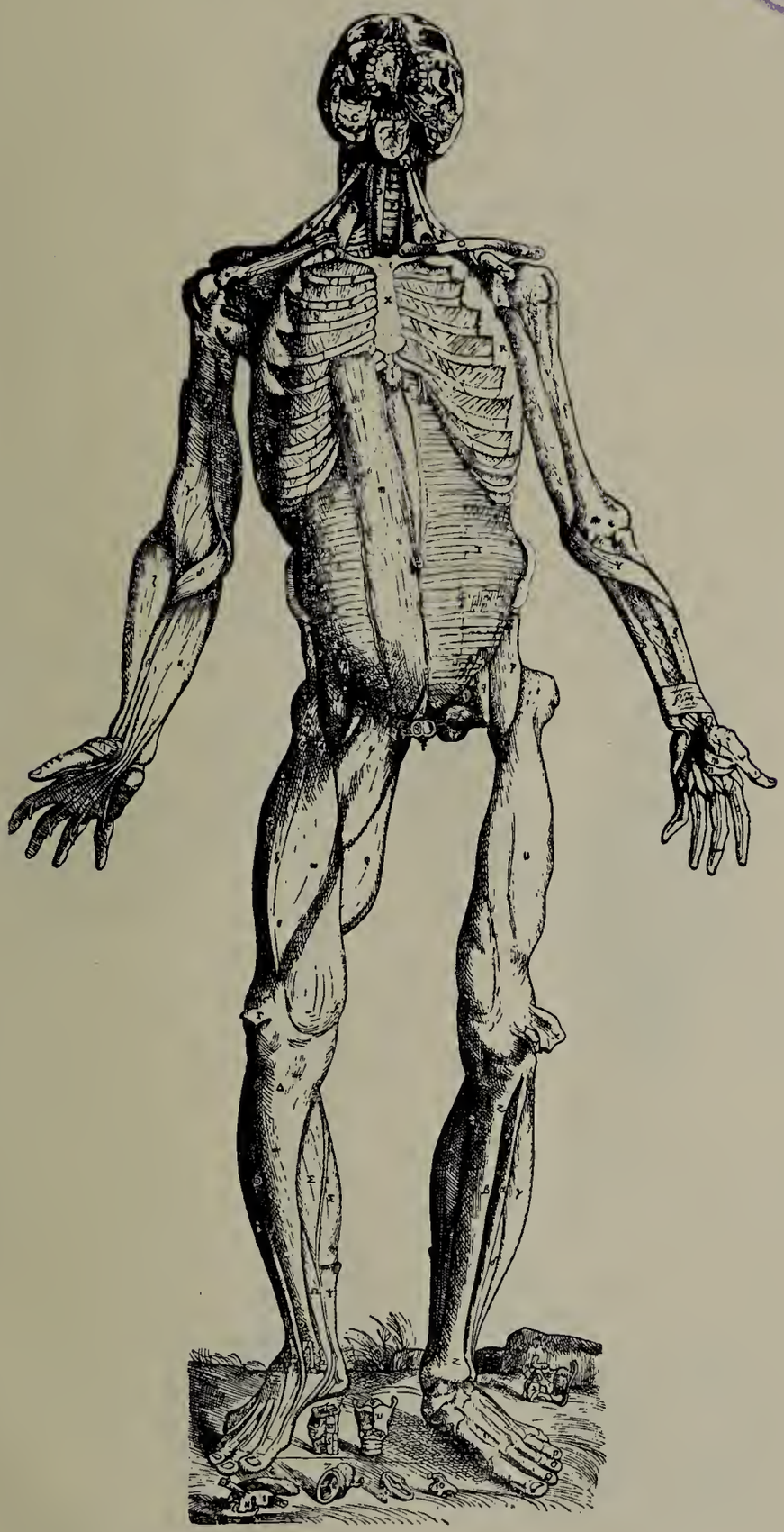


Fig. 5



Fig. 6

Fig. 3 on *I. verso* is a front view. Except for the left hand, the position corresponds with that of the male nude. — On the right are shown the muscles immediately beneath the skin, on their left side the muscles exposed by the removal of the foregoing. — On the right the platysma, on the left the buccinator, sterno-mastoid, omohyoid; on the right the pectoralis, on the left, the subclavius, serratus magnus, external intercostals; on the right the deltoid, on the left the two heads of the biceps humeri; on the right the palmaris longus, on the left the flexor sublimis digitorum, the flexor carpi radialis; on the right the tensor vaginae femoris with the edge of the sheath raised, also the sartorius and gracilis, on the left the quadriceps femoris and adductors.

Besides this method of exposition, special note was made in this and the subsequent figures of corrections made in Galen's descriptions. The flexors and extensors of the thumb and great toe are repeatedly illustrated because Galen had merely noted slips from the muscles common to the fingers and toes. The same remark applies to the plantaris and its insertion into the os calcis on the inner side of the tendo Achillis because Galen had continued the tendon into the plantar fascia, as in the monkey. The popliteus is drawn in the deepest layer of muscles to show its relative unimportance in man, whereas Galen had made it the chief flexor of the leg.

Fig. 4 on *I. recto* exhibits the back muscles; the superficial on the right, the underlying layer on the left. On the right the trapezius, on the left the complexus, levator anguli scapulae and rhomboids; on the right the latissimus dorsi and gluteus maximus, on the left the serratus posticus inferior, internal oblique, gluteus medius, pyriformis, etc.

Both the Nude figures and the 3rd and 4th Muscle figures would be specially useful to medical and art students, but recalling the point of view of Vesalius, the deeper muscles and their action were considered of equal importance. The deep muscles are concerned with the mobility of the spine and of the shoulder and hip joints in the highly finished structure of Man, as compared with the rigid spine and restricted movements of the limbs of animals.

Figure 3 on *H. verso* a front view, Fig. 6; on *H. recto* a back view, exhibit the third and fourth layers of the deep muscles; some are shown raised from their origin and hanging by their tendon of insertion, with the belly of the muscle contracted to show its shape when in action. Throughout great ingenuity is apparent in the

adaptation of the positions of the figures to exhibit particular muscles. Thus in Fig. 6, the obturator internus with the gemelli is shown on one side in position. On the other side it is turned down exposing the inner aspect of the obturator membrane, at the same time that the obturator externus, its origin and insertion, is demonstrated.

Fig. 7 on *G. verso* seen from the front is almost bared of muscle, except for the longus colli, and psoas. The sternum has been turned to one side to expose the triangularis sterni and all the viscera have been removed from the thorax and abdomen, ready for the superposition of the diagrams to be presently noted. — For the rest the figure depicts points not exhibited in the following skeleton. Through the gap made by removing the pubes, the sacrum and coccyx are shown, — also the lesser trochanter of the femur is seen.

Leaf *K. recto* has the reproduction of the 2nd skeleton from the 'Fabrica', which was selected because its side view displays practically all the bones, including their anterior as well as their posterior aspects, except for the points just noted under Fig. 7. All three skeleton figures in the 'Fabrica' were drawn from that of a youth aged 18, and the epiphyseal lines appear, that of the acromion, the head of the humerus, the lower end of the radius, the upper and lower ends of the femur and tibia. — Among small points are represented the sesamoid bones, including the pisiform bone and the *Os Vesalianum.* — The skeleton leans on the monument on which are the drawings as in the 'Fabrica' of the base of the skull, the hyoid bone and auditory ossicles.

Only in the 'Epitome' the epitaph is changed to: —

'Solvitur omne decus leto, niveosque per artus
It Stygius color, et formae populatur honores'.

Miss Joyce Lowe's rendering is as follows: —

All fairness fades with death; o'er limbs once white
The Stygian colour creeps and wastes the beauty bright.

It replaces that on the monument in the 'Fabrica':

Vivitur ingenio. Caetera mortis erunt.
Man's Spirit lives: all else death's hand shall claim.

This latter seems obviously more fitting because it counters the prejudice to the examination of the human body after death.

There follow on three pages diagrams supplied with lettering and indexes which have, when superficially looked at, been termed rough and poor, but attention should be given to the objects Vesalius had in view and concerning which he supplies explanations.

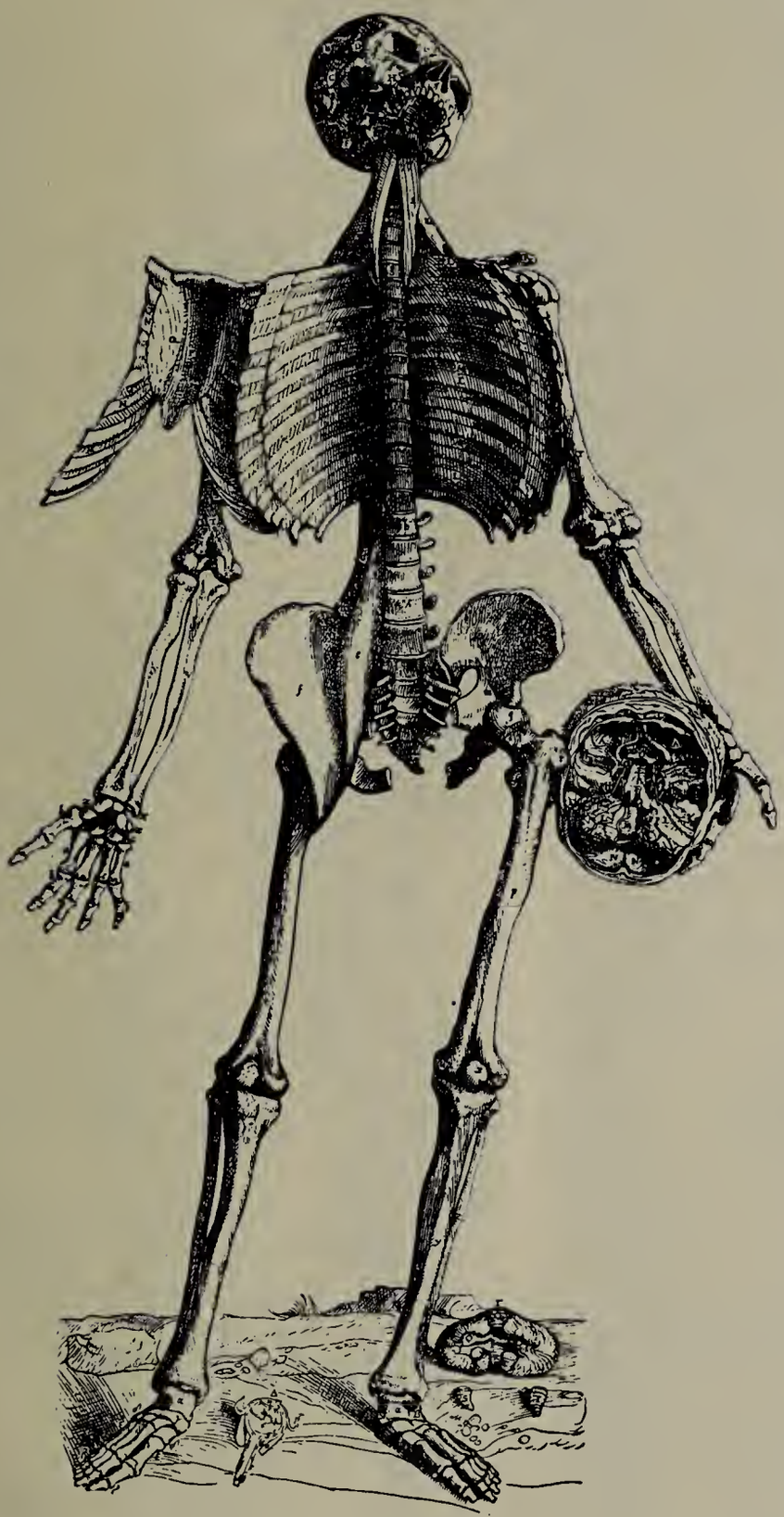


Fig 7.

VENARVM, ARTERIARVM, NERVORVMQVE OMNIVM INTEGRA DELINEATIO,

SIMVL CVM NVTRITIONIS QVAE CIBO POTVQVE FIT ORGANORVM: ET CORDIS PVLMONISQVE ac denum muliebrium generationi subseruientium instrumento-rum imaginibus.

FIGVRAE HVIC CHARTAE IMPRESSAE, cuicq; alia agglutinatur, ac quae peculiariter neruis ostendendis parata est, characterum Index.

CEREBRVM unà cum cerebello cerebriq; exortibus eum in modum hic delineamus, quasi à caluaria enudatum in ipsius basina consp'ceretur, ut appareret si quis erectus caput in posteriora quàm maximè flecteret, sursum retrorsumq; oculos acturus. Caeterùm quoniam ut rusq; lateris eadem neruorum in praesenti figura est natio, sufficerit uni tantùm lateri characteres adhibere.

A,B,C Cerebri ex altero latere basis notatur, ac A indicat partem ipsius ad rariùs situm prominulam, nonnullis q; mamillarem processum nuncupatam. B uerò cerebri partem insinuat, amplum caluariae sinum subeuntem, qui ad latus sinus consistit, quo glans cerebri pituitam excipiens reponitur. C autem maximè posticam cerebri sedem notat.

D,D Cerebellum.

E Sinister cerebri processus, organo olfactus submin'strans.

F Neruus sortis sinistri ortus.

G Neruorum uisoriorum coitus.

H Tunica, in quam uisorius neruus exoluitur, degenerat'ue.

I Secundum neruorum cerebri par.

K,K Minor radix tertij paris.

L Crassior radix tertij paris.

M Quartum par.

N Quinti paris gracilior radix.

O Quinti paris insignior radix.

P Membrana, in quam quintum par in auditus organo praecipuè exoluitur.

Q,R Maioris quinti paris nodosi propagines, quorum haec per cacumelab tur foramen, illa uerò per aliud sibi proprium.

S Sextum neruorum par.

T Septimum neruorum cerebri par. atq; horum neruorũ progressus hic non delineari potuere, quamuis reterm magna ex parte in alijs huius compendy figuris passim, praecipuè uerò in hac superposita, tertia ad musculos ostendendos praecipuè paratarũ occurrans.

V Dorsalis medullae ex cerebri basis meckoinium.

O Dorsalis medullae sedes qua caluariam egred'tur.

a,a,&c Numeri characteres septem cernicis, duodecim thoracis, quinq; lumborum, & sex sacri ossis indicãs uertebras, asq; adeò trigintà neruorum à dorsali medulla prosilientium paris, quorum septem quàm possit accuratissimè & simplicissimè in hac tabella monstrare delineata expressi. Verùm quia hic locus exiguam characterum declarationem admisit, non omnes neruorum soboles literis insignituras sim.

P Septi transuersi sinister neruus, quem citra aliam characterum operam ex quarti, quinti & sexti parium propaginibus efformari conspicis. promptum enim est delineationem intelligere, si prius descripta neruorum series hic picturae accommodetur.

Q Neruus à quinto pari cuti summum humerum inuestienti, & dem musculo brachium mouenti praecipuè distributus.

R Primus brachij neruus, ipsiusq; propagines hic in cutẽ excurrentes.

S Secundus brachij neruus, ipsiusq; in anteriorem cubitum flectentium musculum soboles.

T Tertius brachij neruus, ipsiusq; propago cuti anteriorem brachij sedem induenti oblata.

V Tertij neruj propago ad musculum posteriorẽ cubitũ flectentiũ.

X Secundi neruj portio tertium accedens.

Y Ramus secundi, capus adiens longioris radium in pronum mouentis musculi.

Z Secundi distributio in duos impares ramos.

a Minor ramus secundum radium cuti ad pollicẽ usq; exporrectus.

b Crassior ramus mox in duas propagines diuisus, quarum series in conspicuo est.

c Tertij neruj soboles in musculos internam cubiti sedem occupantes digestae.

d Tertij ramus radio exporrectus, ac dein pollici & indici & medio surculos offerens.

e,e Quartus brachij neruus atq; inferiores ramos notas musculis cubitum extendentibus depromptos.

f Quarti ramus internam brachij cutem adiens.

g Quarti ramus externam & posteriorem brachij accedens cutem.

h,h Quarti ramus cuti externae cubiti digestus.

i Quarti praecipua distributio ad ingressum cubiti.

l,k Quarti ramus radio exporrectus, & externae sedi pollicis, indicis, & medij soboles offerens.

l,l Quarti ramus ulnae exporrectus, & musculis ab externa ipsius sede'n'tium ductentibus ramulos exhibens, ac ante brachiale cessans.

m Quintus brachij neruus.

n Quinti neruj series in musculos ab interno brachij ossis tubere pronatos.

o,o Quinti neruj ramus ulnae exporrectus, & internae sedi parui digiti & anularis, aliquando & medij ramusculos dispergens.

p Dicti modò rami soboles in externam manus sedem reflexae, ac externae parui digiti sedi & anularis & medij surculos dispensans.

q,q Sextus brachij neruus, ipsiusq; sub cute tandũ ductae series. Quis uerò brachij neruorum sit exortus, principiorumq; plexus, absq; notis promptè dignoscitur.

r,r,r Nerui sunt intercostales, illic praecisi, quà cum costis exterrorsum reflectuntur

s,s Rami in posteriora deducti, hic etiam undiq; obuij.

t,t Huiusmodi serie neruj musculos adeuntes thoracis ossibus inserentes.

u,u Propagines indicantur, sexti paris neruorum cerebri ramum costarum radicibus exporrectum augentes.

x,x Propagines neruorum ex lumborum uertebris exilientium, quae abdominis & huius sedis musculis & cuti dispensantur.

y Neruulus tensorem femoris frequenter petens, hicq; resectus

z Propagines sextum femur mouentium adeuntes musculos.

& Femoris petens neruus.

n Primi neruj propago cuti oblata.

β Primi neruj propago altius inter musculos absumpta.

γ Secundus femur petens neruus.

Δ,Δ Secundi neruj soboles per internam femoris et tibiae sedem ad pedis usq; superiora sub cute excurrens.

ε Secundi neruj propago musculis anteriorem femoris sedem occupantibus deprompta.

ζ Tertius femoris neruus.

η Tertij propago, internam femoris cutem implicans.

θ Tertij propago musculos adiens.

ι,ι Quartus femoris neruus, cuius exortus aequè atq; trium superiorum est conspicuus.

κ,κ Series anteriorum propaginum inferiorum partium è sacro osse prodeuntium.

λ Dorsalis medullae extremum.

μ Quarti femur petentis neruj propagines ad capita musculorum à coxendicis ossis appendice prodeuntium sparsae.

ν Quarti neruj soboles in posteriorẽ femoris cutẽ ad medium usq; longitudinis femoris excurrẽs.

ξ Propago praecipuè in quartum tibiam mouentium musculum, ac dein in reliquam posteriorem femoris cutem iuxta genu digesta

ο Soboles in musculos ab inferioribus femoris capitibus pronatos.

π,ϱ Quarti neruj in duos truncos distributio. ac π quidem minorem, ϱ uerò insigniorem notas

σ Minoris trunci propago, externae tibiae cuti ad parui digiti usq; extremum diffusa.

τ Propago fibulae inter musculos exporrecta.

υ Ramulus anteriorem tibiae cutem implicans.

φ,φ Grandioris trunci ramus internae cutis tibiae ad pollicem usque digestus.

χ Grandioris trunci ramus, posterioris tibiae seu suae cuti exporrectus.

ψ Grandioris trunci ramus, ligamentũ penetrãs fibulam sibiae quà haec ossa inuicẽ deliscunt cõmittens, ac dein ad digitorum usque superiora excurrens.

ω Praecipua grãdioris trunci portio, inter tibiae os & calcem pedis inferiora petens, singulisq; digitis surculos offerens.

FINIS.

Prima columna in E, uersu 17. lege, promit 1 col. F, uersu 5. glandula nucis pineae instar effigiata 2 col. in G, uersu 9. perficiuntur.

SERIES CHARTARVM.

A B C D E F G H I K L M, praeter duas chartas nullo charactere insignitas: è quarum una figuram parare licebit, figurae in pagina secunda folij & depictae agglutinandã. ex altera uerò, figura parabitur, ad figuram quae huic paginae impressa est, figenda. Reliqua uerò duodecim folia ex cuiusque arbitratu sunt inuicem nectenda: quãuis magis conueniat A cum M, & B cum L, & C cum K, & ita deinceps iungere, ut uniuersa Epitome quodammodo sexternionẽ constituat, modò in libri formam haec concinnare lubeat.

BASILEAE, EX OFFICINA
Ioannis Oporini, Anno MDXLIII.
Mense Iunio.
M

Fig. 8

CHARTA, EX QVA FIGVRAM PARARE CONVENIT, ILLI QVAE NERVORVM SERIEM EXPRIMIT APPENDENDAM.

OMNES figuræ hac charta impressæ simul ad unam spectãt quæ ea cap er, aut utus com- od ut duerm illi figuræ agglutinãda unus, quæ nervorũ serie proponit ac in folio m inscripto, seu oma un ultimo spectatur Quibus admonitos uo- lu mo qui imperante ire dent exemplaria, suoq; magistro ac redactrix hæc sibi concinnabunt in quo nperet tum in glutinando & singulis à superflua po vero resecandis, tum coloribus si usum ex- ubitendus, quisque quantum uolet præstabit.

Dein ut robori consulatur, tota huic chartæ non rsus liter membrana subgiuinab tur, priusquam to ta charta m ea frusta quæ figuras complecti tur, d u datur qu bus numerum in hoc asscribam, ut quo quæq; loco committenda sit, explicem, quantumq; in ma ssi studiosorum labori consulam

PRIMAM ceterorum præcipuam, ac urlut aliarum omnũ halim et figuræ nudam mu l vissimaq; nemes proportionis proportionem, uti & ce ertas omnes hic obuias delineauimus, quæ primum nn secunq; in ambitu proxime ad delineationem à te ligus charta est resecanda, interim latiusculu reserv uat a in cadius utriusq; portione, à qua postmodum c stinari queat, simulatque reliquæ partes ipsi fur rint commissæ

SECVNDAE figuræ stomachum & anterorẽ uteri ueuli sedem simul cum superiori mem brana omenti, harumq; partium uasis & neruis pro ponent, aliquot aliæ priusquam primæ commissæ sint utrinq; agglutinandæ TERTIA enim, quæ posteriorem regionem exprimit, totius inferioris membranæ sedis quæ sub colo intestino consistit, qua id utericulo exporrigitur, iteru proportione superiori membranæ omenti gluti nanda est, ut omentum sacculi imaginem referat

QVARTA dein, quæ intestinorum imagi nem spectandam offert, tertiæ figuræ tergo ea sede est commutanda, qua inferius uenteuli orificium intestinorum principio contrahitur Sedem hanc i secunda figura et quarta positũ indicabit Quum tamen quartam committis, conducens utrinq; ad l lasera chartæ portionem asservare, illamq; tertiæ figuræ, ut quarta ualidius hæreat, agglutinare.

Nunc secundũ primæ nexurus, erãsuersam sectio nẽ in prima mbi ducens, ubi sinu humiliori septi transuersi sede occurrit, secoris sinũ indicans, quo id sto- mach o hæc transeunt cedit. Per hoc foramẽ stoma chum ita trãsmittes, ut asperæ arteriæ subjaceat, uenteculusq; sua sede consistat. Nexum utrõ ad primæ figuræ tergum iuxta rupti dextum foramen uehetis.

QVINTA figura inferioris omenti mẽ branæ portionem exprimit, quæ posteriori uen- culi subjiciatur sedi, ac urinæ portæ distributorem si mul cum arteriis nerusq; hæc excurrentibus sustinet. Insudet præterea eiusmodi uasa, hic etiã hem eum urinæ ac arteriis per mesenterii diffusis spectatur, tergoq; figura ad primam in secoris cauoita est glutinanda, ut vasis in utriusq; figuris occurrentia in uicem respondeant

SEXTA figura uterum cum testibus se minalibusq; uasis proponens, postquam ceterarum modo circumscripsit, primæ inibi in dextro latere et sinistra iungetur, ubi urinæ arteriæq; seminales simul cum uteri & in sinistro latere in prima figura & sexta spectatur Quum hanc iungis, etiam SEP TIMA, qua uesicam ac umbilici uasa simul cum meatuum urinam deferentium portio ne, eadem sede ad primam ita est conglutinanda, ut meatus illi seminarij uasis subglutinentur, ipsa au- tem uesicæ uertice imbas, proportionẽ quã posita est mam bi, observans, quam puncum delineatio ac cessu naturæ sexui communis erant

OCTAVA secoris gibbæ sedis eam por- tionem delineatam continens, quæ in anteriori cor- poris regione spectatur occurrit, et ũ secoris fissum refert, cui urna ab umbilico ducta inseritur Hanc nag; uelut ex puncto tenuem, illic secoris in prima fi gura committet, ubi A ruere F & S spectatur.

NONA urnæ pancreatis seriem ostendit, ad primæ figuræ tergum est committenda, ubi caua cauda urnam illam sinu conjugi promittit atq; id fere prompte, si ad o mnibulus figuris animũ adhibueris

DECIMA, quæ duas partes, ubi ũ superfluas papyro resecaueris, constituet, superiori sede uesicam ac arteriam dextri lateris delineatas contine- at quæ sub pectoris ossa deorsum repentes, superio rem abdominis sedem petũt Hæc suo charactere q; in regulo ad primæ figuræ q; glutinabitur o auri- tem ad tergum primæ figuræ, qui ad dextrum latus & ũ in rectus conspicitur Humiliori decimæ hgura parti uasa ostenda rui inferiorem abdominis sedem excurrentia, quæ ritibi ad primam figurã sunt cõmittenda ubi in dextro latere l iuxta uasa crua parmula obuiũ est, sellorumq; uasorũ apparentia tutia.

Nunc primam figuram charte cõmittet, quæ ner- uorum seriem proponit, & leui negocio observabis quo sua singula sint locanda, si modò characterem indicem partiumq; descriptionem optime adhibueris.

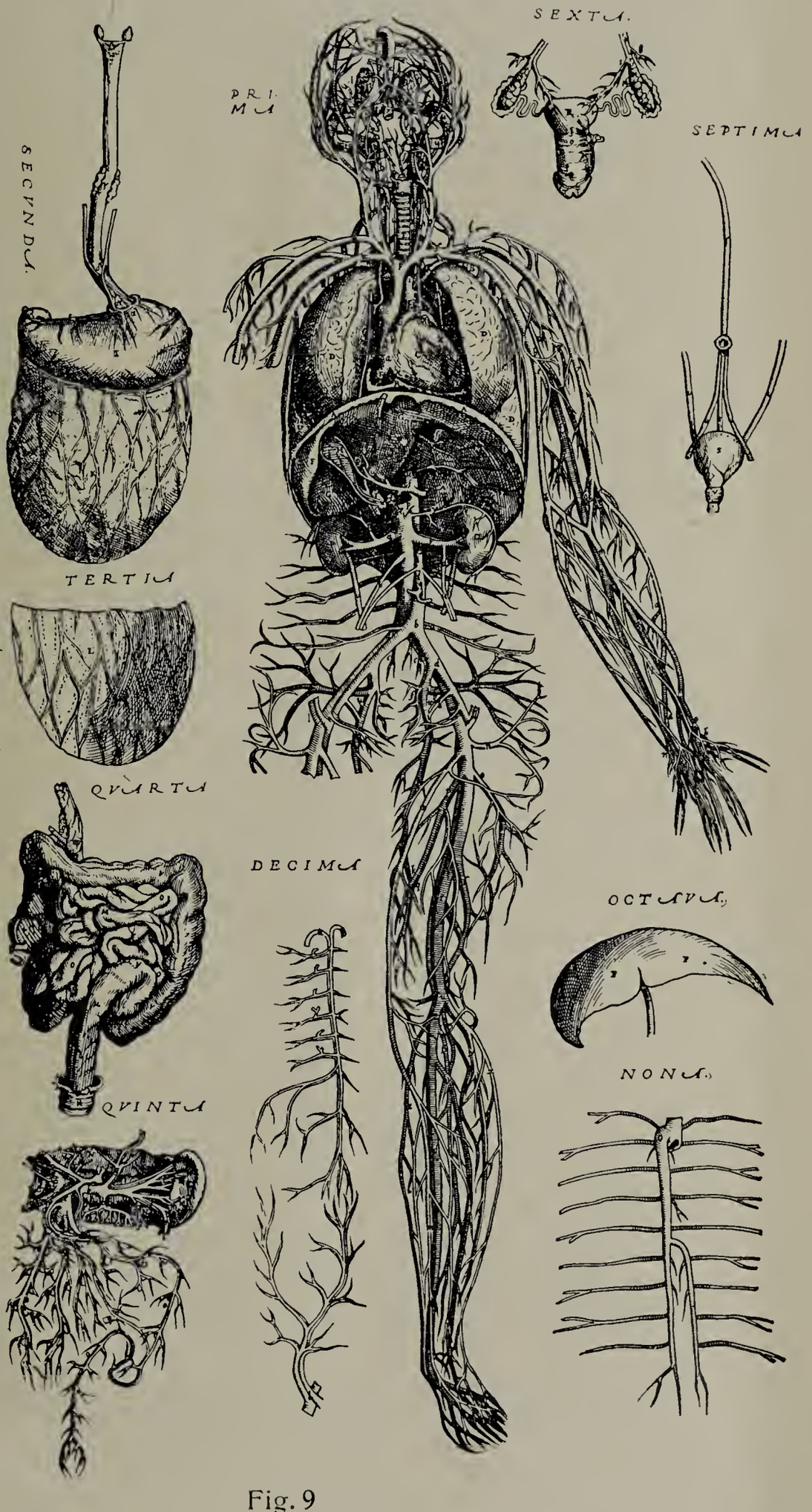


Fig. 9

The Nerve diagram Fig. 8 on *M. recto* was included in the 'Fabrica', but having been drawn for the 'Epitome' and so of greater length, its lower part was infolded, see Fab: 1543. IV. end pp. 353, 354. Explanations are given in Fab: 1543. IV: 338. 86. i. 1. 14., and Fab: 1555. IV. 532. 87. 1.

The diagram was made to be cut out and superimposed on the female nude. — This is readily demonstrated by placing one over the other the corresponding lantern slides in the epidiascope. The same remark applies to the combined vein and artery diagrams reproduced both on *N. recto* and *O. recto*, and which also was included in the 'Fabrica' with the lower edge doubled over, see Fab: 1543. p. 313.

Additional light is thrown on these diagrams by comparing them with the Tabulae Evelynianae preserved in the Museum of the Royal College of Surgeons, of which an account is given by Evelyn in his Diary. Before the means of preserving from putrefaction and of injecting were known, blood vessels and nerves were rapidly dissected out before decomposition had occurred, and were then laid out on boards for drawing, and when varnished over could be preserved. A century after Vesalius, his successor in the professorship of Anatomy at Padua, Vesling, supervised the preparation of the Blood-vessels and Nerves for Evelyn, by the same procedure as was adopted by Vesalius for making these diagrams.

On *N. recto* and *O. recto* are a number of diagrams Fig. 9 reproduced from the 'Fabrica', which Vesalius advised should be first backed by pasting the page on to a sheet of vellum. — They could then be cut out and superimposed upon the preceding figures, the viscera in particular being put over the empty thoracic and abdominal cavities of Fig. V. The combined vein and artery figure is repeated twice for then it could be applied as a whole over the Female Nude, or part of the heart and lungs could be inserted into the thorax of Fig. 7. In the same way there were figures of the oesophagus, stomach and omentum, the free portion of the omentum covering the intestines, the intestines from the duodenum to the anus, the portal vein and tributaries with the spleen, the vena cava and liver, the male and female urinary and genital organs, as also the pubes to fit in the gap in Fig. 7., and a representation of the anastomosis of the blood vessels on the abdominal wall, the superior epigastric with the deep epigastric arteries and veins.

Unfortunately in England as well as on the Continent an acquaintance with the 'Epitome' was prevented by the lower price

of the inferior reproductions by Geminus. — The 1st Edition of Geminus was published in 1545 with copper plate illustrations, dedicated to Henry VIII. — The 2nd Edition with the English Translation by Udall, dedicated to Edward VI, was published in 1553. The 3rd Edition, published in 1559, after revision by Richard Eden is dedicated to Queen Elizabeth, and is rendered valuable by containing the portrait of the queen, immediately after her accession. The Copper plates made by Geminus were taken to Paris and used for the edition by Jacobus Grevinus Claramontanus which was printed in 1564 by Andreas Wechelus. Further copyings and plagiarisms followed. Hence the real 'Epitome' by Vesalius has not been well known.